REMARKS

Applicant proposes to amend claim 55 to include the features of claims 56 and 57 and to amend claim 58 to include the features of claim 59. Further, applicant proposes to amend claim 60 by deleting the wording "(truncated icosahedron) conditionally." The amendments for claims 55 and 58 should be entered because they involve simply adding features of dependent claims to the respective base claims and raise no new issues. The amendment for claim 60 should be entered because it adopts the examiner's suggestions for removing the rejection under 35 USC 112, second paragraph.

Applicant gratefully acknowledges that the examiner has indicated that claim 60 would be allowable if amended to overcome the rejection under 35 USC 112, second paragraph. Applicant has amended claim 60 and it is believed that claim 60 is now allowable.

Claims 55 and 57 stand rejected under 35 USC 102 over Anzai et al. The amendments for claim 55 remove this rejection.

Claims 55 and 56 stand rejected under 35 USC 103 over Fukuma et al in view of Wisnieski.

Since claim 55 has been amended to include the features of claims 56 and 57, the issue to be considered with respect to the amended claim 55 is whether the invention defined in this claim is patentable over the combination of Fukuma et al, Wisnieski and Anzai et al.

Fukuma et al discloses a washing machine that also serves as a foot washer. The washing machine of Fukuma et al is not intended for therapy or exercise and therefore has a different functional purpose from applicant's method and apparatus. The washing machine comprises a washing tub 2 containing a mixture of a "washing" (applicant suggests that in this context "washing" means a liquid) and ceramic balls B. The washing machine also comprises a pump P and a circulating jet apparatus (ducting) 10 which circulates the material in the washing tub and "jets it" from slurry nozzles mounted on the washing tub. Applicant believes that the purpose of the foot washer is to remove foreign material and dead skin from the user's foot by a rubbing action and therefore the ceramic balls are small (column 2, lines 18-19 suggests that the balls B are 0.5-5.00 mm in diameter), as shown in FIGS. 3 and 4, and may have the somewhat rough surface typical of unglazed ceramic but would not have significant projections, which would result in a scratching action rather than a

rubbing action. The difference between scratching and rubbing resides essentially in the fact that the area of contact with the skin is a lot smaller in scratching than in rubbing. Scratching would produce a narrow scratch on the skin rather than cleaning dirt or foreign materials off it.

Also, applicant submits that the apparatus of Fukuma et al should be considered in its working state: a slurry of washing liquid and ceramic balls is being circulated inside a container. This moving liquid-like mixture is necessary to achieve the washing effect of the apparatus. The English abstract of Fukuma et al does not provide a clear description of the slurry (particle size, volume of ceramic balls as a proportion of the total volume of the slurry) but Fukuma et al certainly does not disclose or suggest that the two components of the slurry (ceramic balls and liquid) have separate functions, such that either could be used to achieve a useful purpose separately from the other. Thus, Fukuma et al does not state that the washing tub 2 contains ceramic balls and may also contain liquid, or that the tub contains liquid and may also contain ceramic balls. Applicant therefore submits that the moving washing slurry should be considered as one structurally indivisible element of the apparatus, and that it is improper to consider the components of the slurry as if they were two independent elements, each of which could be used separately from the other.

Wisnieski discloses a massage device having a generally spherical core 12 and protuberances 14 projecting from the core 12. The spherical core has a circumference from 30 to 38 cm (corresponding to a core diameter between 9.5 and 12 cm). Thus, the core of the massage device of Wisnieski would be from a minimum of 19 (9.5 cm divided by 5 mm) to a maximum of 240 (12 cm divided by 0.5 mm) times the diameter of the ceramic balls of Fukuma et al and assuming similar density, the mass of the massage device of Wisnieski would be at least 6,859 (19^3) times that of one of the ceramic balls of Fukuma et al. The protuberances 14 extend outward from the core by 8 to 16 mm and accordingly the overall diameter of the massage device, including the protuberances, is from about 10.3 cm to 13.6 cm. The outer end of each protuberance is provided with a small suction cup. The core 12 and the protuberances 14 may be made of a semi-soft synthetic rubber. In use, the massage device is placed between the foot to be massaged

and a hard surface and the foot is rolled over the massage device. As the foot moves, the massage device rolls back and forth and the suction cups on the protuberances 14 grasp and release small portions of skin.

It would not be practical to make the massage device of Wisnieski significantly smaller because of the complex structure of the protuberances. If the massage device of Wisnieski were made about 5 mm in diameter, the protuberances would be too small for it to be feasible to provide suction cups on the ends of the protuberances. In any event, Wisnieski does not suggest that multiple massage devices should be used in massaging a foot.

Applicant submits that it would not have been obvious to a person of ordinary skill in the art to use the massage device of Wisnieski in the foot washer of Fukuma et al. First, the massage device of Wisnieski is intended to be used by itself rather than with multiple similar devices. Second, the teaching of Wisnieski regarding a massage device that ranges from 10.3 to 13.6 cm in diameter could not readily be applied to the foot washer of Fukuma et al, because the massage device of Wisnieski could not be brought into motion in similar fashion to the much smaller and lighter ceramic balls of Fukuma et al. Fukuma et al is not completely clear on the point, but the reference to jetting from the slurry nozzles 7 implies that the heterogeneous medium or slurry (liquid and ceramic balls), not just the liquid, is circulated and applicant submits that it is clear that it would not be practical to circulate a medium composed of liquid and numerous massage devices of the structure disclosed by Wisnieski.

Further, because the washing slurry of Fukuma et al is a single element of the apparatus, as discussed above, it would not in any event have been obvious to a person of ordinary skill in the art to replace the small ceramic balls with the much larger and heavier massage device of Wisnieski.

As mentioned above, the purpose of the apparatus of Fukuma et al is realized through bringing the slurry into motion. Fukuma et al does not disclose or suggest any possibility of using the apparatus in any other way. Fukuma et al does not mention that the small ceramic balls (as small as 0.5 mm in diameter) may be used other than as a component of the slurry, or that they may be used for massage therapy or exercise in water.

If multiple massage devices of the structure disclosed by Wisnieski were placed in the washing machine of Fukuma et al, the suction cups would result in the massage devices sticking together and to the walls of the washing tub. Accordingly, the washing machine would not operate either to perform its intended function of washing the feet of the user or to perform the function of the massage device of Wisnieski.

In order to preserve the basic function of the foot washer disclosed by Fukuma et al, it would be necessary either to make the massage device much smaller or to make the tub of Fukuma et al much larger. Neither of these possibilities would be practical.

In the case of Fukuma et al, the small ceramic balls are used to create an abrasive swirling environment when they are set into motion by an external drive (evidently the pump P shown in FIGS. 3 and 4). Without an external drive to induce the swirling movement of the ceramic balls, the foot washer of Fukuma et al is inoperative and there is no suggestion in the prior art that the foot washer would service a useful purpose, such as foot massage in a liquid medium. The ceramic balls of Fukuma et al serve a purpose only when set in motion by an external power source. The English abstract of Fukuma et al does not disclose the nature of the surface of the ceramic balls, but if the ceramic balls have a rough surface, applicant submits that the roughness would be on a much smaller scale than the protuberances of Wisnieski. There is no disclosure in Fukuma et al that the ceramic balls might have protrusions similar to those of Wisnieski, and a person of ordinary skill in the art would recognize that such protrusions would reduce the efficacy of the foot washer of Fukuma et al because it would reduce the contact area between the ball and the user's foot. Since the effectiveness in achieving the main goal of the apparatus would be reduced or eliminated if the small ceramic balls of Fukuma et al were replaced with massage devices as shown by Wisnieski, such replacement would not have been obvious to a person of ordinary skill in the art.

The massage ball 3 of Anzai et al is somewhat similar to the massage device of Wisnieski. Anzai et al shows that two massage balls 3 are mounted in a holder to facilitate rolling of the massage balls 3 over the user's body.

Anzai et al uses the word "conical" when describing the protrusions of the massage ball. Although the protrusions resemble a cone in shape, it is very clear that the protrusions are not pointed. Otherwise, their application to the human body would not produce "comfortable finger pressure affect" (col 1, line 62).

The massage apparatus of Anzai et al imitates the well known Japanese method of massage called SHIATSU, which is derived from the Japanese words "shi" meaning finger and "atsu" meaning pressure. Thus, the shape of the protrusions of the massage ball is similar to the shape of a tip of a human finger, which somewhat resembles a cone but is not pointed (there is no sharp tip).

Applicant's position with regard to the disclosure of Anzai et al is supported by the following quotes from Anzai et al:

> When the massage apparatus is placed on the floor with the balls enclosed in the case, and the user lies on his back on the apparatus, the two balls come in contact with the effective spots on the user's back to apply pressure corresponding to the user's weight. Col 2, lines 3-10
>
> As shown in Fig. 3, when a massage apparatus A is placed on the floor with the balls 3 stored in the case 1, and a person lies on his back on the massage apparatus A, the two balls 3 come in contact with the effective spots on the back, and a finger pressure effect corresponding to the weight of the user is obtained. Col. 4, lines 21-26.
>
> Therefore, by holding the massage apparatus in hand and by pressing the portion of the rotating balls ... against user's hand, ... comfortable finger pressure effect can be obtained. Col. 1, lines 58-63.
>
> It is desirable to slightly round the tip of the projections so that damage or pain on the skin is advantageously prevented. Col. 3, lines 9-11.

It would not have been obvious to a person of ordinary skill in the art to use the massage balls of Anzai et al in lieu of the small ceramic balls of Fukuma et al, for most of the reasons discussed above in connection with the combination of Fukuma et al and Wisnieski. Since it would not have been obvious to a person of ordinary skill in the art to use the massage device of Wisnieski or the massage ball of Anzai et al in lieu of the small ceramic balls of Fukuma et al, applicant submits that the issue of whether it would have been obvious to modify the massage device of Wisnieski in view of Anzai et al by

using conical projections rather than the protrusions shown by Wisnieski is not relevant to patentability of claim 55.

In addition, even if it were obvious to apply the teaching of Anzai et al regarding the projections to the massage device of Wisnieski, the modified massage device would not have the structural features of a massaging element as defined in claim 55. Thus, claim 55 requires that the projections be pointed. The drawings submitted with the present application clearly show the structure of the massaging elements, in particular it can be clearly seen that the protrusions are pointed. When a patient moves an extremity in contact with applicant's massaging elements, the pointed projections on the massaging elements prick the patient and the mild pain that is thereby induced causes reflex action on the part of the patient. This involuntary (passive) movement caused by the mildly painful sensation is important to the therapy that is achieved by the applicant's method and apparatus. Such stimulation of the nerve receptors of the patient's extremity is mentioned in paragraph [0021] of applicant's specification, which states:

> Since the distance between the points of adjacent massaging protrusions corresponds to the distance between nerve receptors (biologically active points) in the palm of the hand, the massaging protrusions stimulate the nerve receptors. (emphasis added)

Although Anzai et al illustrates the projections as being conical, the reference does not disclose that the projections are so pointed as to cause reflex action or involuntary movement on the part of the user. The projections shown in FIGS. 17-22 are clearly not pointed. Anzai et al does not suggest that the protrusions of the massage ball should be pointed, because the intended "comfortable finger pressure effect" would not then be achieved. If the protrusions of the massage ball were pointed, the effect on the patient's skin when the patient lies on his back on the apparatus as suggested by Anzai et al (col. 2, lines 7-8) would be very different: a painful pricking sensation and possible skin damage.

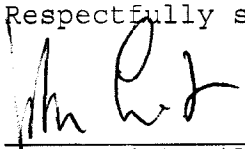
In view of the foregoing, applicant submits that regardless of whether it would have been obvious to apply the teaching of Anzai et al to Wisnieski, Anzai et al does not teach use of pointed projections as required by claim 55.

Claim 58 stands rejected under 35 USC 103 over Turnewitsch in view of Wisnieski. Claim 58 has been amended to include the feature of claim 59 and accordingly the rejection over Turnewitsch in view of Wisnieski has been overcome.

Claims 58 and 59 stand rejected under 35 USC 103 over Fukuma et al in view of Wisnieski. Applicant submits that it would not have been obvious to a person of ordinary skill in the art to modify the foot washer of Fukuma et al in view of Wisnieski in the manner suggested by the examiner, for the reasons discussed fully above.

For the examiner's assistance in further examination of this application, applicant submits herewith an image showing applicant's therapy apparatus in use. Applicant understands that this image does not affect the scope of the claims, but believes that it serves to highlight the differences between applicant's apparatus and method and those of the prior art, particularly Anzai et al.

Respectfully submitted,



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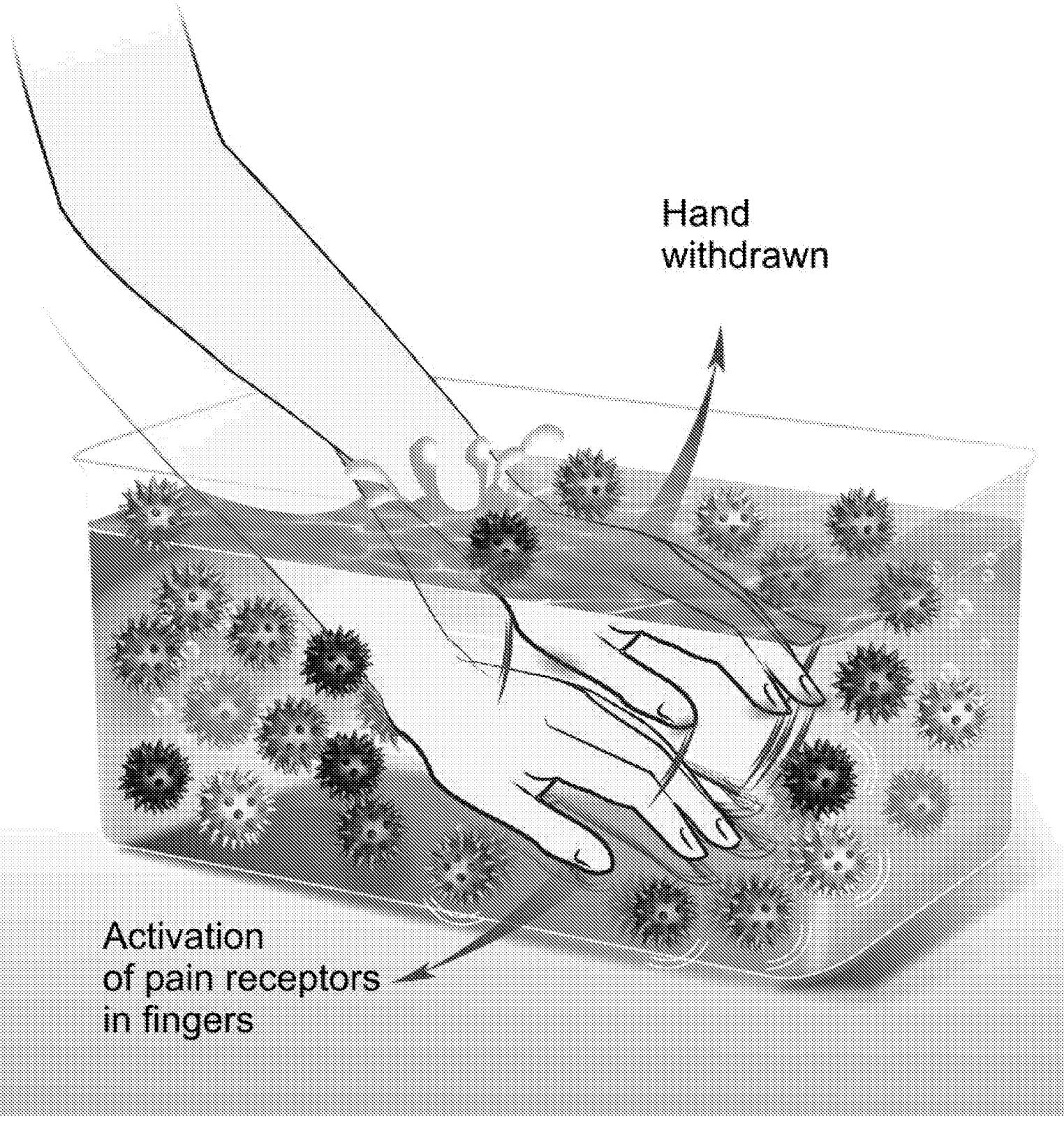
Hand
withdrawn
Activation
of pain receptors
in fingers